



## WORKPLACE SAFETY AND HEALTH IN MISSOURI

*From The  
National Institute for Occupational Safety and Health*



### State Profile 2002

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*Delivering on the Nation's promise:  
Safety and health at work for all people through prevention.*

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### The National Institute for Occupational Safety and Health

NIOSH is the primary federal agency responsible for conducting research and making recommendations for the prevention of work-related illness and injury. NIOSH is located in the Department of Health and Human Services in the Centers for Disease Control and Prevention. The NIOSH mission is to provide national and world leadership to prevent work-related illness, injury, disability, and death by gathering information, conducting scientific research, and translating the knowledge gained into products and services. As part of its mission, NIOSH supports programs in every state to improve the health and safety of workers. NIOSH has developed this document to highlight recent NIOSH programs important to workers and employers in Missouri.

### The Burden of Occupational Illness and Injury in Missouri

- In Missouri, there are approximately 2.8 million individuals employed in the workforce.<sup>1</sup>
- In 2000, 148 workers died as a result of workplace injuries.<sup>2</sup>
- The transportation and public utilities industry had the highest number of fatalities, followed by the agriculture, forestry, and fishing industry and the services industry.<sup>2</sup>
- In 1999, the most recent year for which data are available, the rate of fatal workplace injuries was 5.9 deaths per 100,000 workers – above the national average rate of 4.5 deaths per 100,000 workers.<sup>2</sup>
- In 2000, there were 132,000 nonfatal workplace injuries and illnesses in Missouri.<sup>3</sup>

### The Cost of Occupational Injury and Illness in Missouri

In 2000, the most recent year for which data are available, a total of \$525.6 million was paid for workers' compensation claims by Missouri private insurers, self-insured employers, and state funds.<sup>4</sup> This figure does not include compensation paid to workers employed by the federal government and also underestimates the total financial burden for private sector businesses, since only a fraction of health care costs and earnings lost through work injuries and illnesses is covered by workers' compensation. Chronic occupational illnesses like cancer are substantially under-reported in workers' compensation systems because work-relatedness is often difficult to establish.

### How NIOSH Prevents Worker Injuries and Diseases in Missouri

#### Health Hazard Evaluations (HHEs) and Technical Assistance

NIOSH evaluates workplace hazards and recommends solutions when requested by employers, workers, or state or federal agencies. Since 1993, NIOSH has responded to 56 requests for HHEs in Missouri in a variety of industrial settings, including the following example:

### ***Jasper, Missouri: Bronchiolitis Obliterans at Popcorn Plant***

NIOSH is working with management, employees, and state health officials to assess workers' potential risk for a serious lung disease from occupational exposures at a microwave popcorn packaging plant in Jasper, Missouri. From 1992 to 2000, eight former workers of the plant developed a severe and rare lung disease called bronchiolitis obliterans, causing some workers to be placed on lung transplant lists. In August 2000, the Missouri Department of Health requested an HHE to determine if these cases were work-related and if current workers were at risk. Initial testing led NIOSH to recommend respirator use by workers and improvements in ventilation to reduce the amount of dust and flavoring ingredients in the air. Despite the improvements, testing of current workers in 2001 showed excessive declines in the breathing tests of some workers. NIOSH recommended and the company is implementing additional changes to completely isolate the sources of flavoring and dust in the air. NIOSH, in cooperation with the company, will continue to monitor workers' lung function and to assess the effectiveness of engineering changes. NIOSH has worked extensively with employees, the community, and health professionals to disseminate its findings and recommendations. Other companies that use flavorings are being surveyed to determine whether additional workers are at risk. These efforts will enable the development of guidelines for safe use of flavorings by all companies.

### **Fatality Assessment and Control Evaluation (FACE) Investigations**

NIOSH developed the FACE program to identify work situations with a high risk of fatality and to formulate and disseminate prevention strategies. In Missouri, FACE is conducted by the state's Department of Health under a cooperative agreement with NIOSH. Since 1995, there have been 27 FACE investigations in Missouri, including the following example:

#### ***Missouri: Child Laborer Electrocuted While Working At Sawmill***

On June 22, 2000, a 16-year-old male laborer was electrocuted while working at a sawmill. The victim was working alone using a compressed air hose and nozzle to blow sawdust from a 440-volt electric re-saw machine. Apparently, he knelt down on wet ground under the machine and contacted the machine's metal framework, which was energized. The FACE investigator concluded that, in order to prevent similar occurrences, employers should: ensure electrical machinery is installed and grounded properly and that it is routinely inspected for mechanical and electrical defects; know and comply with state and federal child labor laws that prohibit certain tasks for employees less than 18 years of age; and develop, implement, and enforce a comprehensive written safety program which includes hazard recognition, avoidance, and abatement.

### **Fire Fighter Fatality Investigation and Prevention Program**

The purpose of the NIOSH Fire Fighter Fatality Investigation and Prevention Program is to determine factors that cause or contribute to fire fighter deaths suffered in the line of duty. NIOSH uses data from these investigations to generate fatality investigation reports and a database of case results that guides the development of prevention and intervention activities. Since 1997, there have been seven fire fighter fatality investigations in Missouri, including the following recent example:

#### ***Missouri: Residential Fire Causes Deaths of Two Fire Fighters and Serious Injury of Third Fire Fighter***

On March 18, 2001, two fire fighters died and an assistant chief fire fighter was injured while trying to exit the first floor of a private residence after its second floor collapsed. When the self-contained breathing apparatus (SCBA) worn by the assistant chief and one of the other fire fighters became low on air, the assistant chief instructed both victims to exit the structure while he continued to fight the fire. The two victims apparently became disoriented from the collapse of the second floor and could not find their way out. When the assistant chief tried to exit, he was knocked down by part of the second-floor collapse. Crew members were able to rescue him, but the intensity of the fire and the lack of back-up SCBAs hindered additional rescue attempts. NIOSH investigators concluded that to minimize the risk of similar occurrences, fire departments should ensure that: adequate staff are available to respond to incidents; an incident evaluation

is conducted before initiating fire-fighting efforts; fire fighters consistently use personal alert safety system devices; adequate on-scene communications are maintained; adequate personal protective equipment is available while fire fighters are engaged in fire activity; and all SCBAs are adequately maintained.

## **Building State Capacity**

### ***State-Based Surveillance***

NIOSH funds the Adult Blood Lead Epidemiology and Surveillance Program (ABLES) in the Missouri Department of Health. Through ABLES, the agency's staff track and respond to cases of excessive lead exposure in adults which can cause a variety of adverse health outcomes such as kidney or nervous system damage and potential infertility.

## **Extramural Programs Funded by NIOSH**

The following are examples of recent research grants or cooperative agreements funded by NIOSH in the state of Missouri.

### ***Basic Mechanism of Adverse Effects of Noise on Hearing***

Depending on the intensity and duration of exposure to noise, workers may sustain a temporary or permanent threshold shift in hearing. Moderate hearing loss may have significant adverse effects on all aspects of a person's life, including oral communication, employment opportunities, and the enjoyment of such pleasures as listening to the human voice, music, and the sounds of nature. The pathogenesis of temporary and permanent threshold shifts in hearing is poorly understood. NIOSH funds researchers at Washington University to study the relationship between temporary and permanent threshold shifts in hearing to identify factors that are associated with increased noise susceptibility. The study's goal is to provide information that will help develop scientifically sound strategies to reduce noise-induced hearing loss in workers.

### ***Caffeine and Naps: Practical Shiftwork Interventions***

Millions of Americans are shift workers, working steady night shifts or rotating shifts. However, night work is associated with disturbed sleep, decreased alertness and performance, and increased transportation and industrial accidents. With support from NIOSH, researchers at St. Luke's Hospital in Kansas City are studying napping and caffeine as practical interventions. The results may be applicable to many industries.

*Additional information regarding NIOSH services and activities can be accessed through the NIOSH home page at <http://www.cdc.gov/niosh/homepage.html> or by calling the NIOSH 800-number at 1-800-356-NIOSH (1-800-356-4674).*

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<sup>1</sup>U.S. Department of Labor (DOL), Bureau of Labor Statistics (BLS), Local Area Unemployment Statistics, Current Population Survey, 2000.

<sup>2</sup>DOL, BLS in cooperation with state and federal agencies, Census of Fatal Occupational Injuries, 1999-2000.

<sup>3</sup>DOL, BLS in cooperation with participating state agencies, Survey of Occupational Injuries and Illnesses, 2000.

<sup>4</sup>National Academy of Social Insurance, *Workers' Compensation: Benefits, Coverage, and Costs, 2000 New Estimates*, May 2002.